

ANSI B11.7-1995 (R2010)

American National Standard for Machine Tools –

Cold Headers and Cold Formers — Safety Requirements for Construction, Care, and Use

Secretariat and Accredited Standards Developer:

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Contents

[Foreword](#)iv

[Introduction](#)vii

[1 Scope, purpose, and application](#) 1

[2 Normative references](#) 2

[3 Definitions](#) 3

[4 Responsibility](#) 6

[5 Hazard identification and hazard control strategy](#) 9

[6 Design and construction](#) 10

[7 Layout, installation, testing and start-up](#) 19

[8 Safeguarding](#) 20

[9 Care and use](#) 24

[Figure 1 – Nomenclature for typical cold header \(operator’s side\)](#) 26

[Figure 2 – Nomenclature for typical cold header \(internal view – camshaft side\)](#) 27

[Figure 4 – Large cold former](#) 29

[Figure 5 – Larger cold former](#) 30

[Figure 6 – Toggle header \(enclosure removed\)](#) 31

[Figure 7 – Two–die, three–punch cold header](#) 32

[Figure 8 – Bearing cold header \(ball and/or roller\)](#) 33

[Figure 9 – Micro former](#) 34

[Figure 10 – Formax boltmaker](#) 35

[Figure 11 – Formax header](#) 36

[Figure 12a – Single die – die block \(example\)](#) 37

[Figure 12b – Multi die – die block \(example\)](#) 37

[Figure 13 – Examples of hand feeding tools](#) 38

[Figure 14 – Example of turnover bar](#) 38

Foreword

(This Foreword is not part of American National Standard B11.7-1995)

The primary objective of this standard is to eliminate or control the risk of injuries to personnel associated with cold headers and cold formers by establishing requirements for the machine's construction, care and use. To accomplish this objective, responsibilities have been assigned to the supplier (manufacturer, rebuilder, modifier) as well as to personnel in the working environment.

Point-of-operation safeguarding is the single most important factor in the elimination of point-of-operation injuries. A production system consists of the cold headers and cold formers as one component, feeding methods (including part or scrap removal) as a second component, and the third component, point-of-operation safeguarding. The vital third component, point-of-operation safeguarding, can be evaluated for effectiveness only after the first two components and operator involvement is known. Since this information is known and controlled by the user, the responsibility for compliance with clause 6 has been assigned accordingly.

The safeguarding of cold headers and cold formers is complicated by the wide variety of operations and operating conditions, the variations in size, speed, and type of cold header/cold former used; the size and kind of pieces to be worked; the required accuracy of the finished work; the skill of operators; the length of run; and the method of material feeding and part and scrap removal. Because of these varying factors in the operations and in the workplace, a wide variety of point-of-operation safeguarding methods (guards and devices) has been covered in this standard.

The words "safe" and "safety" are not absolutes. Safety is an attitude. While the goal of this standard is to eliminate injuries, it is recognized that risk factors cannot be practically reduced to zero in any human activity. This standard is not intended to replace good judgment and personal responsibility. Operator skill, attitude, training, job monotony, fatigue and experience are safety factors that must be considered by the user.

To aid all parties concerned in complying with the requirements of this standard, explanatory information has been placed in the right column, adjacent to the applicable requirements.

Inquiries with respect to the application or the substantive requirements of this standard and suggestions for its improvement are welcomed, and should be sent to the AMT - The Association For Manufacturing Technology, 7901 Westpark Drive, McLean, Virginia 22102-4269, Attention: Safety Department.

This standard was revised by the B11.7 Subcommittee, processed and administered by the AMT, as Secretariat, and approved by the B11 Parent Voting Committee for submittal to ANSI as an American National Standard in accordance with requirements of the ANSI Accredited B11 Operating Procedures.

Subsequent to an annual interest survey conducted by the Secretariat, the organizations listed below have registered a voting interest on this standard. Their listing does not necessarily imply that all organizations voted for its approval. At the time of ballot, the following representatives registered a vote on behalf of their organization.

Suggestions for improvement of this standard will be welcome. They should be sent to The Association For Manufacturing Technology 7901 Westpark Drive, McLean, VA 22102 - Attention: B11 Secretariat.

This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Safety Standards for Machine Tools. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the B11 Committee had the following members:

Theodore M. Wire, Chairman
Charles A. Carlsson, Secretary

| <i>Organization Represented</i> | <i>Name of Representative</i> |
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| American Boiler Manufacturers Association | Thomas A. Saari |
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| Sheet Metal & Air Conditioning Contractors' National Association, Inc. | Thomas J. Soles, Jr. |
| Tooling and Manufacturing Association | Jeff Stollard |
| | Bruce C. Braker (Alt.) |

Subcommittee B11.7 on Safety of Cold Headers and Cold Formers, which developed this standard, had the following members:

| | | |
|-----------------------------|----------------------|------------------------|
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| Frank W. Akstens, Secretary | Mike Kanda | Jesse Robinett |
| | John Kenny, Jr. | William E. Ruxton |
| | Paul H. Langenderfer | Ronald P. Tomallo, Jr. |
| | Richard McClellan | Bernard Thiteca |

Explanation of the format, and ANSI B11 conventions

This ANSI B11.7 – 1995 standard is divided into parts formerly referred to as sections or chapters and now referred to as clauses in line with the current ANSI style manual. Major divisions of clauses are referred to as subclauses and, when referenced by other text in the standard, are denoted by the subclause number (e.g., see 5.1).

The standard uses a two-column format to provide supporting information for requirements. The material in the left column is confined to “Standards Requirements” only, and is so captioned. The right column, captioned “Explanatory Information” contains information that the writing Subcommittee believed would help to clarify the requirements contained in the standard. This column should not be construed as being a part of the requirements of this American National Standard.

As in all American National Standards, the term “SHALL” denotes a requirement that is to be strictly followed in order to conform to this standard; no deviation is permitted. The term “SHOULD” denotes a recommendation, a practice or condition among several alternatives, or a preferred method or course of action.

Similarly, the term “CAN” denotes a possibility, ability or capability, whether physical or causal, and the term “MAY” denotes a permissible course of action within the limits of the standard.

B11 conventions: Operating rules (safe practices) are not included in either column of this standard unless they are of such nature as to be vital safety requirements, equal in weight to other requirements, or guides to assist in compliance with the standard. The B11 standards do not use the term “and/or” but instead, the term “OR” is used as an inclusive disjunction, meaning *one or the other or both*. A distinction between the terms “*individual*” and “*personnel*” is drawn. Individual includes personnel (employees, subcontractors, consultants, or other contract workers under the indirect control of the supplier or user) but also encompasses persons who are not under the direct or indirect control of the supplier or user (e.g., visitors, vendors, etc.). Gauge refers to a measuring or testing instrument; gage refers to limiting device (e.g., backgage).

Figures 1-14 included in this standard are provided to aid in its understanding. As such, they are to be considered to be examples and not as part of the requirements. Annex A is for information purposes only.

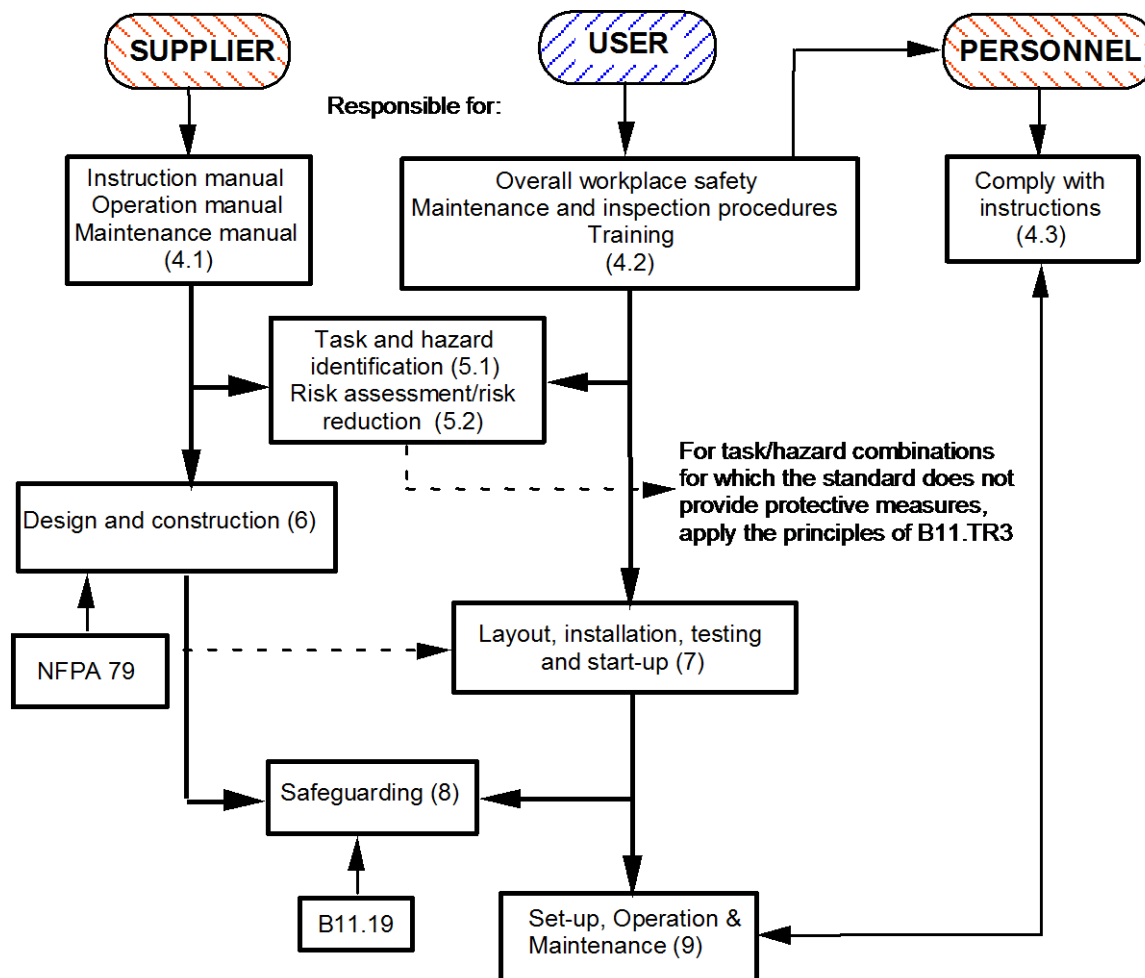
Suggestions for improvement of this standard will be welcome. They should be sent to AMT-The Association For Manufacturing Technology, 7901 Westpark Drive, McLean, VA 22102 - Attention: B11 Secretariat.

Introduction

The primary purpose of every machine tool is to process parts. This is accomplished by the machine imparting process energy onto the workpiece. Inadvertent interference with, or accidental misdirection of the released energy during production, maintenance, commissioning and de-commissioning may result in injury.

The primary purpose of the ANSI B11 series of machine tool safety standards is to devise and propose ways to minimize risks of the potential hazards. This can be accomplished either by an appropriate machine design, by restricting personnel or other individuals' access to hazard areas, and by devising work procedures to minimize personnel exposure to hazardous situations. This is the essence of the ANSI B11 series of safety standards.

The responsibility for the alleviation of these risks is divided between the equipment supplier, the equipment user and its operating personnel, as follows (numbers in parentheses refer to the clause numbers in these standards which address that responsibility):



American National Standard for Machine Tools – Cold headers and cold formers – Safety Requirements for Construction, Care, and Use

STANDARD REQUIREMENTS

EXPLANATORY INFORMATION

(Not part of American National Standard for Machine Tools – Cold headers and cold formers - Safety Requirements for Construction, Care, and Use, ANSI B11.7-1993)

1 Scope, purpose, and application

1.1 Scope

The requirements of this standard apply only to those mechanically powered machines commonly referred to as cold headers and cold formers, which perform many operations such as shearing, heading, upsetting, extruding, trimming, forming, cold working, or warm forming material by means of tools and dies. This type of equipment generally has the ram in a horizontal position. Included are pointers and roll formers when they are mechanically an integral part of the basic machine.

NOTE: In the context of this standard, header refers to cold headers and cold formers.

1.2 Purpose

The purpose of this standard is to establish safety requirements with respect to the construction, safeguarding, care, and use of headers.

The requirements of this standard are aimed at eliminating injuries to operating, maintenance, and other personnel who are working on, or adjacent to, a header, and minimizing accidental damage to equipment.

The standard is not intended to establish requirements for personal protective equipment that may be needed for specific operations.

1.3 Application

The requirements of this standard apply to:

- Cold header,
- Cold former,
- Ball header,
- Tubular rivet header,
- Roller header,
- Progressive headers,
- Bolt making machines,
- Parts formers,

See figures 1–11 for examples of some of the types of headers covered by this standard.